

Otley All Saints CE Primary School

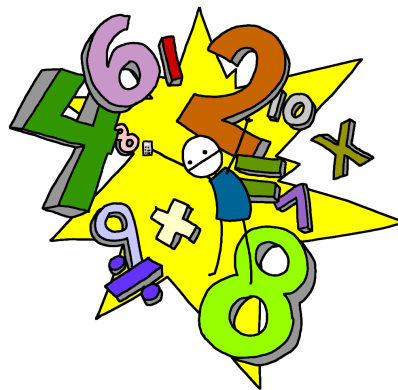
Mathematics Calculation Policy

Contents:

- Formal written procedures

Supporting documents

- White Rose Calculation Policy - Guidance
- White Rose Calculation Policy – Addition, Subtraction, Multiplication and Division



Spring 2023

ADDITION

Year 2

- Add two 2-digit numbers
- Column method without regrouping adding units first

	T	U	
	5	7	
+	2	2	
	<hr/>	<hr/>	
	7	9	
	<hr/>	<hr/>	

Year 3

- Column methods with regrouping
- 2-digit numbers leading to 3-digit numbers
- Regrouping will cross either 10s or 100s boundary

		T	U	
		5	5	
	+	6	7	
	<hr/>	<hr/>	<hr/>	
	1	2	2	
	<hr/>	<hr/>	<hr/>	
		1		
	H	T	U	
	2	3	9	
+	1	4	6	
	<hr/>	<hr/>	<hr/>	
	3	8	5	
	<hr/>	<hr/>	<hr/>	
		1		

	H	T	U	
	2	7	2	
+	1	4	6	
	4	1	8	
	1			

Year 4

- Adding 4-digit numbers using column method with regrouping
- Decimals in the context of money

	Th	H	T	U	
	3	5	9	6	
+	1	8	7	4	
	5	4	7	0	
	1	1	1		

Year 5

- Adding more than 4-digit numbers using column method with regrouping
- Using decimals for money

	Tth	Th	H	T	U	
	3	7	8	0	4	
+	4	5	2	3	7	
	8	3	0	4	1	

	1	1		1		

Year 6

- as Year 5, moving onto decimals

	H	T	U • th	hth		
	3	6	5 • 8	4		
+	4	5	8 • 4	8		
	8	2	4 • 3	2		
	1	1	1	1		

SUBTRACTION

Year 2

- Column method without regrouping subtracting units first

	T	U	
	3	9	
-	1	7	
	2	2	

Year 3

- Column method with 2-digit and 3-digit numbers introducing regrouping (decomposition)
- Regrouping will cross either the 10s or 100s boundary

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	T	U		
	6			
	7	¹ 2		
-	3	9		
	<u>3</u>	<u>3</u>		
	H	T	U	
		8		
	5	9	¹ 3	
-	1	6	8	
	<u>4</u>	<u>2</u>	<u>5</u>	

	H	T	U	
		7		

	3	8	¹ 1	
-	3	2	4	
		5	7	
	H	T	U	
	7			
	8	¹ 5	7	
-	1	9	1	
	6	6	6	

Year 4

- Column method with regrouping up to 4-digit numbers
- Using decimals in the context of money

	Th	H	T	U	
	1		4		
	2	¹ 3	5	¹ 4	
-	1	9	2	5	
		4	2	9	

Year 5

- Column method with regrouping up to 5-digit numbers
- Using decimals in the context of money

	Tth	Th	H	T	U	
	4			2		
	5	¹ 6	7	3	¹ 4	
-	2	9	5	0	7	
	2	7	2	2	7	

Year 6

	H	T	U	• th	hth	
	3		6	9		
	4	¹ 6	7	¹ 0	¹ 1	
-	2	7	6	• 4	5	
	1	9	0	• 5	6	

- As Year 5, moving onto decimals using a placeholder zero (•) to help align digits correctly

	H	T	U	• th	hth	
			3	¹ 0		
	5	9	4	¹ 1	¹ ••	
-	••	1	3	• 7	9	
	5	8	0	• 3	1	

MULTIPLICATION

Year 4

- Short multiplication of 2-digit leading to 3-digit numbers multiplied by a single digit number, multiplying units first

		T	U		
		2	4		
	x		3		
		7	2		
		1			
		H	T	U	
		4	5	2	
	x			4	
	1	8	0	8	
		2			

Year 5

- Short multiplication of 3-digit and 4-digit numbers multiplied by a single digit number.
- Long multiplication of 3-digit numbers multiplied by a 2-digit number

		Th	H	T	U	
		2	3	8	4	
	x				6	
	1	4	3	0	4	
		2	5	2		

			H	T	U	
			3	2	4	
		x		3	5	
		1	₁ 6	₂ 2	0	
		9	₁ 7	2	0	
	1	1	3	4	0	
		₁				

Year 6

- Long multiplication of up to 4-digit numbers multiplied by a 2-digit number including decimal numbers

			Th	H	T	U	
			7	4	6	1	
		x			4	3	
		2	₁ 2	₁ 3	8	3	
	2	₁ 9	₂ 8	4	4	0	
	3	2	0	8	2	3	
	₁	₁		₁			

Multiplying Decimals

	T	U	th	hth	

	2	3	2	5	
		•			
x				4	
	1	3	0	0	
		•			
	1	1	2		

DIVISION

Year 4

- Divide 3-digit numbers by a 1-digit number with no remainders

1.				
		1	3	
	2	2	6	
2.				
		1	4	
	4	5	¹ 6	

3.				
		1	2	
	7	8	¹ 4	
4.				
		0	3	2
	4	1	2	8

5.				
		0	3	4
	4	1	3	¹ 6

Year 5

- Short division of up to 4-digit numbers by a 1-digit number with remainders

		0	6	9	5	r1	
	5	3	³ 4	⁴ 7	² 6		

Year 6

- Long division of up to 4-digit numbers by 2-digit numbers
- if the divisor is up to 12 then use a short-division method
- for divisors greater than 12 compile a ready reckoner first
- Children may choose either short or long vision as they prefer

			0	1	6	0	r2
							0
	2	4	3	8	6	0	
		-	2	4			
			1	4	6		
		-	1	4	4		
					2	0	

Ready Reckoner – 24 times table

1 x 24 = 24
2 x 24 = 48
3 x 24 = 72
4 x 24 = 96
5 x 24 = 120
6 x 24 = 144
etc

			0	1	6	0	r2	
							0	
	2	4	3	8	¹⁴ 6	² 0		